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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,649	07/08/2000	Tetsuji Tsukamoto	9915125(018)	9299

7590 10/09/2003
Moonray Kojima
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EXAMINER

VARGAS, DIXOMARA

ART UNIT PAPER NUMBER

2859

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/612,649

Applicant(s)

TSUKAMOTO, TETSUJI

Examiner

Dixomara Vargas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 recites the limitation "said filtering" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 6, 7, 11, 12 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanayama et al. (US 5,519,320).

With respect to claims 1 and 6, Kanayama discloses a spin excitation method for exciting spins within an object to be imaged by a pulse sequence containing RF pulses, said method comprising the steps of (Abstract): predicting a specific absorption ratio (SAR) of the object to be imaged in executing said pulse sequence (Column 9, lines 31-43); and adjusting at least one among the number of pulses, pulse waveform and pulse width of said radio frequency (RF) pulses in said pulse sequence so that said predicted SAR value falls within a predetermined limit (Columns 8 and 12, lines 46-63 and 1-6 respectively, Figure 10).

7. With respect to claims 2, 7 and 12, Kanayama discloses said RF pulses to be adjusted are 180° pulses (Column 12, lines 1-6, Figure 8A).

8. With respect to claim 11, Kanayama discloses a magnetic resonance maging apparatus having (Abstract): static magnetic field generating means for generating a static magnetic field in a space containing an object to be imaged; gradient magnetic field generating means for generating a gradient magnetic field in said space (Abstract); transmit means for transmitting an RF excitation signal to said space; receive means for receiving a magnetic resonance signal from said space (Abstract); and image producing means for producing an image based on said received magnetic resonance signal, wherein the spin excitation apparatus as defined in claim 6 is employed as said transmit means (Abstract).

9. With respect to claim 17, see rejection of claims 1 and 11 above.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 4, 8, 9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanayama et al. (US 5,519,320) in view of Pauly (US 5,280,245).

With respect to claims 3, 4, 8, 9, 13 and 14, Kanayama discloses the claimed invention as stated above in paragraph 6 except for the adjustment of the pulse waveform of said RF pulses is modification from a Shinnar-Le Roux (SLR) pulse waveform to a sinc pulse waveform obtained by filtering said SLR pulse waveform. However, Pauly discloses using Shinnar-Le Roux (SLR) for modifying the pulses (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Pauly's teachings for using SLR modifications with Kanayama's spin excitation method for the purpose of adjusting the refocusing pulses with a phase compensation as shown by Pauly (Column 3, lines 17-67).

12. Claims 5, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanayama et al. (US 5,519,320) in view of Moonen et al. (US 5,570,019).

With respect to claims 5, 10 and 15, Kanayama discloses the claimed invention as stated above in paragraph 6 except for employing a Hamming filter for filtering. However, Moonen discloses the use of a Hamming filter (Column 7, lines 19-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Moonen's

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teachings about a Hamming filter with Kanayama's spin excitation method for the purpose of improving the RF frequency profile by eliminating any artifacts or undesirable component from the signal.

Conclusion

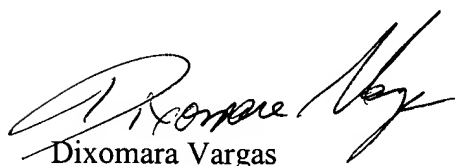
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional prior art cited in the PTO 892 discloses NMR system monitoring SAR.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (703) 305-5705.

The examiner can normally be reached on 8:00 am. to 4:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (703) 308-3875. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0956.



Dixomara Vargas
Art Unit 2859
September 29, 2003



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800